

REMARKS

Claims 19, 24-25, and 28-54 are pending. Applicant has amended claims 39 and 54 to place them in independent form. Applicant has amended claims 41 and 42 to depend from independent claim 39.

Applicant responds to each of the Action's rejections in the order in which they are presented in the Action.

I. Section 102(b) Rejections Overcome

Claims 19, 24-25, and 28-30 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,192,085 (McOnie). Applicant respectfully traverses this rejection.

In order to anticipate a claim, the cited reference must teach each and every element recited in the claim. McOnie fails to do so.

Claim 19 recites:

A method of fixing a first part of a multi-part assembly to a second part thereof which comprises providing a fixation device having a ring body which is manufactured with an endless angular extent and an integrally formed weakened zone therein, forming an axial split in the body at the weakened zone, and interposing the fixation device between the first and second parts such that the first and second parts are fixed together through the fixation device, in which the weakened zone is a structural discontinuity in the body, wherein the structural discontinuity is a notch, wherein the ring body has radially spaced-apart inner and outer circumferential surfaces, and wherein the notch extends from the inner circumferential surface to the outer circumferential surface.

McOnie does not teach each and every element of independent claim 19.

For example, McOnie does not teach a fixation device for fixing a first part of a multi-part assembly to a second part as recited in claim 19. The Office Action contends that the rotary face assembly 27 ('assembly') of McOnie is equivalent to the fixation device recited in claim 19. However, the assembly 27 is a sealing device and does not fix the stationary seal ring 48 ('ring') to the rotary housing 12 ('housing') of the mechanical seal 10 of McOnie. The mechanical seal 10 of McOnie is held together by setting plates 45 before location in a fluid containing vessel, and thereafter by the split flange 98. As disclosed at column 8, lines 13 onwards, if the setting plates are disengaged, and the split

flange is removed, the ring is readily removed from the housing, despite the presence of the assembly. It is therefore evident that the rotary face assembly of McOnie is not a fixation device.

As another example, McOnie fails to disclose that “the weakened zone is a structural discontinuity in the body, wherein the structural discontinuity is a notch, wherein the ring body has radially spaced-apart inner and outer circumferential surfaces, and wherein the notch extends from the inner circumferential surface to the outer circumferential surface” as recited in claim 19. McOnie *fails to include any particular disclosure* regarding the points at which the rotary seal ring 16 is fractured to form fracture lines 41. McOnie only states at various points in the reference that the rotary seal ring 16 is fractured to form fracture lines 41. Such a dearth of disclosure certainly does not disclose a “weakened zone is a structural discontinuity in the body, wherein the structural discontinuity is a notch, wherein the ring body has radially spaced-apart inner and outer circumferential surfaces, and wherein the notch extends from the inner circumferential surface to the outer circumferential surface” as recited in claim 19.

For at least the foregoing reasons, Applicant respectfully submits that claim 19 is patentable over McOnie and requests that this rejection be withdrawn.

Claims 24-25 and 28-30 each depend from patentable independent claim 19. For at least this reason and without acquiescing in the Action’s rejections of these claims, Applicant respectfully submits that these dependent claims are also patentable and requests that these rejections be withdrawn. Applicant expressly reserves the right to argue the separate patentability of one or more of these dependent claims at a future date.

II. Section 103(a) Rejections Overcome

A. Claims 19, 24-38, and 43-54 have been rejected under 35 U.S.C. §103(a) as being unpatentable over PCT Publication No. WO 01/28887 (Brand) in view of U.S. Patent No. 5,192,085 (McOnie) and further in view of U.S. Patent No. 4,151,779 (Trimmer). Applicant respectfully traverses these rejections.

The Office Action asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Brand’s ring with a

breakable weakened zone as taught by McOnie, without the disadvantageous entangling of the rings, as taught and suggested by Trimmer. Applicants respectfully disagree.

As described above, McOnie fails to teach or suggest various recitations of independent claim 19. Brand and Trimmer fail to make up for the deficiencies of McOnie.

For example, Trimmer does not suggest the use of a ring with a breakable weakened zone. In fact, Trimmer teaches the use of a closed ring. Trimmer identifies the problem of disentangling circlips, which are open ring-like elements and that the solution to this problem is “*a ring with a **closed uninterrupted** angular shape and including a weakened part which allows the adjacent end parts to be pressed to each other without disengaging the endparts from the weakened part.*” (column 1, lines 15-35).

If the skilled person, starting from Brand, were taught by Trimmer that disentangling rings is a problem, he may then choose to use the solution taught by Trimmer and replace the open ring-like element of Brand with the closed uninterrupted ring, having a weakened part which allows adjacent end parts to be pressed to each other without disengaging the end part. Such a solution does not anticipate or render obvious the invention recited in claim 19.

For at least the foregoing reasons, Applicant respectfully submits that claim 19 is patentable over Brand in view of McOnie and Trimmer and requests that this rejection be withdrawn.

Claims 24-38 and 43-53 each depend from patentable independent claim 19. For at least this reason and without acquiescing in the Action’s rejections of these claims, Applicant respectfully submits that these dependent claims are also patentable and requests that these rejections be withdrawn. Applicant expressly reserves the right to argue the separate patentability of one or more of these dependent claims at a future date.

Applicants have amended claim 54 to place it in independent form by incorporating all of the recitations of claim 19. Applicants respectfully submit that claim 54 is patentable over Brand in view of McOnie and Trimmer for at least the following reasons. As claim 54 includes the recitations of claim 19, claim 54 is patentable for all of the reasons provided above for claim 19. Additionally, claim 54 recites “wherein the ring

body has a circumferential wall, the circumferential wall having an axial dimension, and wherein the notch provides the ring body with a circumferential zone of reduced axial dimension.” Contrary to the assertion of the Office Action, Brand in view of McOnie and Trimmer do not disclose this recitation.

Regarding claim 54, the Office Action asserts that Brand discloses a ring body as provided in the foregoing recitations of claim 54. Specifically, the Office Action states that Brand discloses a ring body having a circumferential wall, the circumferential wall having an axial dimension (when relaxed as shown in figure 4a), and wherein the notch provides the ring body with a circumferential zone of reduced axial dimension (when wedged between tubular sleeve 302 and the neck of canister 321 as shown in figure 4c). By examining figures 4a and 4c of Brand, it is clear that ring 325 has two free ends, circumferentially spaced to form a c-like shape. When wedged between tubular sleeve 302 and the neck of canister 321 as shown in figure 4c, the free ends are pressed closer to one another. However, the resulting ring as illustrated in figure 4c does not show a ring body having a notch that provides the ring body with a circumferential zone of reduced axial dimension. If the Examiner elects to maintain the rejection of this claim, Applicant respectfully requests that the Examiner describe with particularity how the disclosure of Brand, in combination with the disclosures of McOnie and Trimmer, provide the recitations of claim 54.

For at least the foregoing reasons, Applicant respectfully submits that claim 54 is patentable over Brand in view of McOnie and Trimmer and respectfully requests that this rejection be withdrawn.

B. Claims 39-42 have been rejected under 35 U.S.C. §103(a) as being unpatentable over PCT Publication No. WO 01/28887 (Brand) in view of U.S. Patent No. 5,192,085 (McOnie) and U.S. Patent No. 4,151,779 (Trimmer) as applied to Claim 19 and further in view of U.S. Patent No. 2,648,578 (Stearns). Applicant respectfully traverses these rejections.

Applicant has amended claim 39 to place it in independent form by incorporating all of the recitations of claim 19. Applicant has also amended claims 41 and 42 to depend from independent claim 39.

Independent claim 39 recites, inter alia, “a method of fixing a first part of a multi-part assembly to a second part thereof which comprises providing a fixation device having a ring body which is manufactured with an endless angular extent and an integrally formed weakened zone therein, forming an axial split in the body at the weakened zone, . . . wherein the axial split is formed by applying a radial force on the body.” The references as combined fail to disclose at least these recitations of claim 39.

As illustrated at Figure 1, McOnie proposes a rotary face assembly 27 that includes an elastomeric rotary face cup 14 and a rotary seal face 16. As described at column 5, lines 21 onwards:

The elastomeric rotary face cup 14 is securely bonded to the rear portion of the outer circumference of a rotary seal face 16. After bonding, the rotary face seal ring 16 is fractured at two points 41 forming approximately equal halves. ***The cup is cut or otherwise separated entirely through its cross section at a cut line 36 which is directly adjacent to one of the rotary seal ring 16 fracture lines 41.***

Thus, the rotary face assembly 27 of McOnie is not manufactured with an endless angular extent and an integrally formed weakened zone therein, wherein an axial split can be formed by applying a radial force on the rotary face assembly 27. The cut line 36 in the elastomeric rotary face cup 14 is not described as being a weakened zone in the rotary face assembly 27. Instead, only the rotary face seal ring 16 of the rotary face assembly 27 is described as having a fracture point. Thus, the rotary face assembly 27 of McOnie, which consists of the rotary face seal ring 16 and the elastomeric rotary face cup 14, does not have an integrally formed weakened zone wherein an axial split can suitably be formed by applying a radial force on the rotary face assembly 27. McOnie describes the severing of the elastomeric rotary face cup 14 as involving fracture of the rotary face seal ring 16 a fracture lines 41 followed by cutting or otherwise separating the elastomeric rotary face cup 14 along the cut line 36 directly adjacent one of the rotary seal ring 16 fracture lines 41.

A method as recited in claim 39 involving forming an axial split in the body at the weakened zone by applying a radial force on the body would not provide a satisfactory result if applied in McOnie. If one were to apply a radial force to the rotary face assembly 27 of McOnie, the elastomeric rotary face cup 14 would stretch and, if enough radial force were applied, eventually sever. However, the severing of the elastomeric

rotary face cup 14 would not be controlled enough to ensure that the elastomeric rotary face cup 14 was severed along the cut line 36 directly adjacent one of the rotary seal ring 16 fracture lines 41 as required by McOnie.

None of the additionally cited references, namely Brand, Trimmer or Stearns, make up for the deficiencies of McOnie.

For at least the foregoing reason, claim 39 is patentable over the cited references.

Claims 40-42 each depend from patentable independent claim 39. For at least this reason and without acquiescing in the Action's rejections of these claims, Applicant respectfully submits that these dependent claims are also patentable and requests that these rejections be withdrawn. Applicant expressly reserves the right to argue the separate patentability of one or more of these dependent claims at a future date.

III. Conclusion

All claim rejections being addressed in full, Applicant respectfully requests the withdrawal of the outstanding objections and rejections and the issuance of a Notice of Allowance. Should the Examiner have any questions regarding the foregoing, Applicant respectfully requests that the Examiner contact the undersigned, who can be reached at (919) 483-9024.

Respectfully submitted,

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